SECTION OF THE POSTERIOR SPINAL ROOTS FOR THE RELIEF OF PAIN IN A CASE OF NEURITIS OF THE BRACHIAL PLEXUS; CESSATION OF PAIN IN THE AFFECTED AREA; LATER DEVELOPMENT OF BROWN-SEQUARD'S PARALYSIS AS A RESULT OF LAMINECTOMY; UNUSUAL DISTRIBUTION OF ROOT ANESTHESIA; LATER PARTIAL RETURN OF SENSIBILITY.*

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ABSTRACT.

The important features in this case are mentioned in the title. A man had paralysis of almost the entire left upper limb, as the result of neuritis following an accident. Division of the posterior roots of the fifth, sixth and seventh cervical nerves on the left side was performed on account of intense and persisting pain in the thumb and forefinger and corresponding half of the middle finger, back and front; and of less intense pain extending like a half-bracelet around the back of the wrist, and from the middle point of this bracelet up the middle of the forearm to the olecranon. The operation gave complete relief from this pain in the left upper limb, but caused Brown-Séquard's paralysis, the motor weakness being on the left side. This paralysis was probably due to hemorrhage within the spinal canal or pressure from granulation tissue or callus. Pain, lasting some months, developed in the neck after the operation, and was probably from an injury to a nerve in this part. After the operation the absolute loss of sensation for touch and pain was limited to the whole thumb with its ball, back of the hand, and a strip along the radial aspect of the forearm and arm. The palmar surface of fore and middle fingers was not anesthetic. Dr. Prince believed that the absolutely anesthetic strip along the radial edge of the forearm was in part or wholly due to the division of the fifth root. The sixth root in the hand could not have supplied more than the thumb (front and back) with its ball, though it probably aided in giving sen-

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sory fibers to the back of the forefinger. The seventh cervical probably gave a more extensive supply to the back of the hand than usual, but not to the fingers. The remainder of the backs of all four fingers, and nearly the whole of the palm and palmar surfaces of the fingers must have been innervated through the eighth cervical or first thoracic. A remarkable partial restoration of sensation in the anesthetic area was attributed to overlapping nerve supply from adjoining root areas.

DISCUSSION.

Dr. A. Meyer said he had mentioned recently to Dr. Prince that of late we are again considerably at sea with regard to the anatomical and clinical correlations of the Brown-Séquard paralysis, since Brown-Séquard had stated, in his last publication on the matter, that he had to change his view completely concerning this subject, because, on cutting the posterior root he had obtained the Brown-Séquard symptom-complex: further, by making a second hemisection lower down, after producing the Brown-Séquard symptoms, he was capable of simply reversing the whole picture in the posterior segments of the body. So the question arose whether it was really necessary to assume that a blood clot was active in the production of Brown-Séquard paralysis. Dr. Meyer had mentioned this to Dr. Prince because he was desirous of knowing whether any of the neurologists present had any experience of their own, experimental or pathological, which would remove again the doubts that Brown-Séquard himself had expressed. It is undoubtedly one of the most difficult questions to examine experimentally, because of the difficulty of determining an anesthesia in animals, and whenever experiments of the sort are made, it is evident that exceedingly accurate microscopical examination with serial sections—not with simple sections taken at random—of the whole region of the wound will be necessary to establish the question whether perhaps disorder of the blood supply, or important hemorrhages during operation, had taken place.

Dr. M. Prince said he had nothing more to say, excepting that he had never seen a laminectomy performed, especially when the dura was opened, without thinking of the possible danger of an artificial blood-clot being formed in the canal, and later pressing on the cord. He had called the attention of the surgeon to this danger. As one watches an operation it seems strange that blood does not gravitate into the canal. It looked as though this had actually occurred in this case, or else that pressure upon the cord had been caused by granulation tissue. Dr. Meyer suggested the other possibility, a purely physiological explanation, which is interesting. But on the other hand, it well may be that the paralysis which Brown-Séquard noted in his experiments was likewise due to injury from blood clot or other pressure. Perhaps the explanation may not be the same in two cases.

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141 Ueber die Selbstwahrnehmung der Herder-Krankungen des Gehirns durch den Kranken bei Rindenblindheit und Rindentaubheit (Cortical Blindness and Deafness as Observed and Regarded by the Afflicted Themselves). G. Anton (Archiv. für Psychiatrie und Nervenkrankheiten, xxxii, Heft I, 1899, p. 86).

Circumscribed cortical disease and the resulting functional disturbances are noticed and observed in different degrees by the patients themselves. Anton gives the results of his observations on three cases in point.

Case I. Patient notices neither spoken words nor noises of any kind, reads and writes wrongly, denies being deaf, however, but suffers with hallucinations of hearing and ideas of insanity. The auditory hallucinations point to disease of the temporal lobe. The attitude of the patient as regards his disturbances of hearing is proof that the most central perceptive centers for hearing are disturbed.

Case II. With only a slight disturbance of speech, which the patient herself regarded as abnormal and annoying, there also existed a hemianopsia, of which she took absolutely no notice. Furthermore, there was inability to use her position-sense. She was able to remember objects seen. Upon autopsy there were found symmetrical foci in both occipital lobes, as a result of which the fibers of the optic tract were interrupted in their course. Anton's conclusions as to this case led him to believe that the injuries of the cuneus and the calcarine fissure were not sufficiently extensive to cause a permanent ignorance on the part of the patient of her hemianopsia, and that there must have been still further brain lesions in order that the degeneration of one of the sense functions remained latent to the patient.

Case III. Patient did not understand spoken words and did not respond to noises. There was paraphasia, but she retained the power to read and write quite well. The loss of her power of hearing was not at all recognized by the patient, although she often noticed that the words she uttered were wrong. The autopsy disclosed bilateral softenings in the first and second temporal convolutions and in the lower parietal lobe, as well as secondary degenerations. The auditory nerves and their roots were intact. From these and other cases he concludes that bilateral lesions of the temporal lobe have other results and characteristic symptoms than the mere sum of those seen in unilateral lesions of right and left temporal lobes would have. Complete deafness may result from bilateral lesions of the temporal lobes, while at the same time the patient is entirely unaware of it. This symptom gives us a new diagnostic means to differentiate bilateral temporal disease from peripheral deafness. JELLIFFE.